

Application No. 10/618,133
 Amdt. under Rule 116 faxed May 19, 2006
 Attorney Docket No. ARA-US-P1

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph running from page 23, line 5 to page 24, line 2 with the following amended paragraph:

Referring to FIG. 5C, the heat exchanger assembly comprises a top heat exchanger 50, and a bottom heat exchanger 52 that are connected together in series. Both heat exchangers are helical coil, tube-in-tube heat exchangers. The heater, reactor and temperature homogenizer (not shown) are nested within the second heat exchanger 52 in the same manner as described above with respect to the heat exchanger 96 of ~~FIG. 5~~ FIG. 5A. In operation, the process fluid enters an annular side inlet 44 (see, arrow T) of the top heat exchanger 50 where it is pre-heated by the product fluid counter-currently flowing through the tube side. The process fluid exits via an annular side outlet 48 and is carried by a first annular outlet conduit 45 to an annular side inlet 49 of the bottom heat exchanger 52. The process fluid flows through the annular side of the bottom heat exchanger 52 where it is further pre-heated by the product fluid counter-currently flowing through the tube side. The process fluid exits the bottom heat exchanger 52 via an annular side outlet 51 and is carrier by a second annular outlet conduit 53 (see arrow T') into the reactor (not shown) where is heated to the process temperature by the heater (not shown). The processed fluid or product exits the reactor and is carried by a first tube inlet conduit ~~[[53]]~~ 55 to a tube side inlet 47 (see arrow U) of the bottom heat exchanger 52. The product flows up the tube side of the bottom heat exchanger wherein it is cooled by the process fluid counter-currently flowing through the annular side. The product exits the bottom heat exchanger at a tube side outlet 62 and is carried by a second tube inlet conduit 63 to a tube side inlet 64 of the top heat exchanger 50. The product moves through the tube side of the top heat exchanger 50 wherein it is further

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cooled by the process fluid counter-currently flowing through the annular side. The product exits the top heat exchanger 50 at a tube side outlet 65 (see arrow U').

Please replace the paragraph at page 35, lines 15-22 with the following amended paragraph:

From the reactor 418, the processed fluid (i.e. product fluid) re-enters the heat exchanger 416 via a tube side inlet 428 and is cooled by the fluid counter-currently flowing in the annular side. The product fluid exits the heat exchanger 416 at a tube side outlet 430 and passes through a third filter [[372]] 374 and a second flow restrictor 398. A portion of the product fluid from the second flow restrictor is diverted to pass through an endotoxin sensor 410' so that the endotoxin level of product fluid can be measured and the endotoxin level readings are sent to the PLC 348 via the signal conditioner 410 and circuit 352. The product fluid then passes through a three-way valve 368 and is collected at a product outlet.